

# Centralized Computer System Smart Utility Design to Monitor Road/Dam Construction in India.

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*Abstract*—This paper studies the feasibility of a real-time monitoring system to provide prompt analysis supports of machine's behavior on e-Road construction sites. The need for the construction is to continue measurement and monitoring with advance construction technology roads and bridges become larger in scale with increasing lengthened depth. Aim of paper is to reduce the corruption in construction and business field to improve the safety of the facility and design computerized construction using wireless network system with GPRS modem. The system makes use of wireless networking technology and servers for the running of software, handling collected data, real-time site state visualization, and remote interaction communications. It helps in construction department for their best results and providing the proper services to the construction area. This paper included technical measures which set the ratios of materials which has used in build area. The system founds to cover a large field whilst retaining its simple and easily deployable features. It reduces ultimately original shortcomings in worker requirements, management and has advanced the means of administration and management's awareness. In conclusion, the system proved to be very useful for the management of field e-Road construction analyses in the case of such a long length road construction.

*Index Terms*—GPRS, Pentium processor, Potentiometer, Helical gear motor, Arduino Board

## I. INTRODUCTION

Research in E-road construction is receiving lot of attention in construction area as well as industrial world. The need for in construction is to continue measurement and monitoring. With advance construction technology bridges and roads become larger in scale with increasing length and depth. Aim of our project is to reduce the corruption in construction and business field to improve the safety of the facility and design computerized construction using wireless network system with GPRS modem. We also track the location of vehicle. In Indian construction, there is no government control unit are situated in this area. It is not efficient to monitor and control them. This leads to terrific loss of cement and aggregates or prevent from corrupt environment. This helps in construction department for their best results and gives the proper services to the construction of roads and dam. The project included technical measures which set the ratios of materials which has used in build area. This system works on continues search/step algorithm.

## II. LITERATURE SURVEY

There are some existing methodologies which are one of the great and important steps towards construction of road. E-read construction is a main concept. This was introduced early in 2004, but later implemented. The e-road construction is a new concept towards avoiding the corruption. I earlier system, there is system control through workers behaviors. This is also helpful

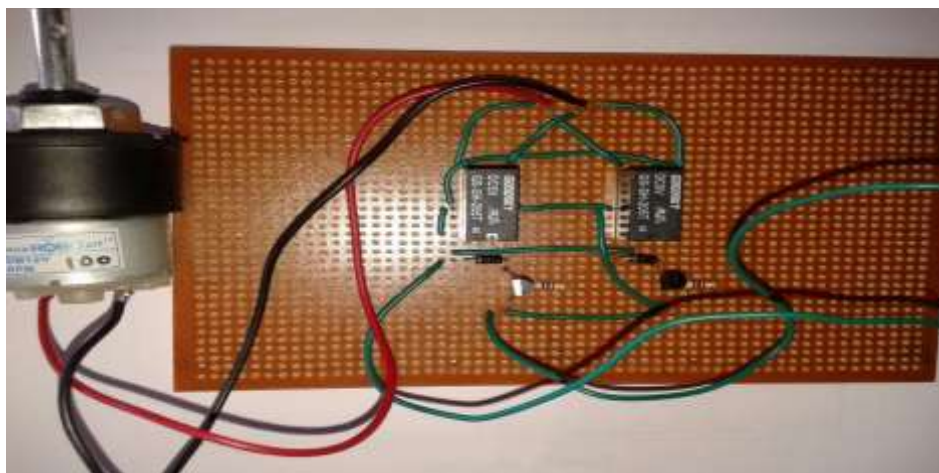
## III. EXISTING METHODOLOGY

There are so many concepts to construct a road or Dam which generally implemented in those system, but there is no central control for organization or government. In that type of system, the construction is under an authorized person. Who gives all the suggestions.

This cannot be very clear and transparent to us or government. There are chances for corruption. There is no any proper measurement for mixing materials or proper ratio .Many of these not considers the length of that area and not consider ratio of material.

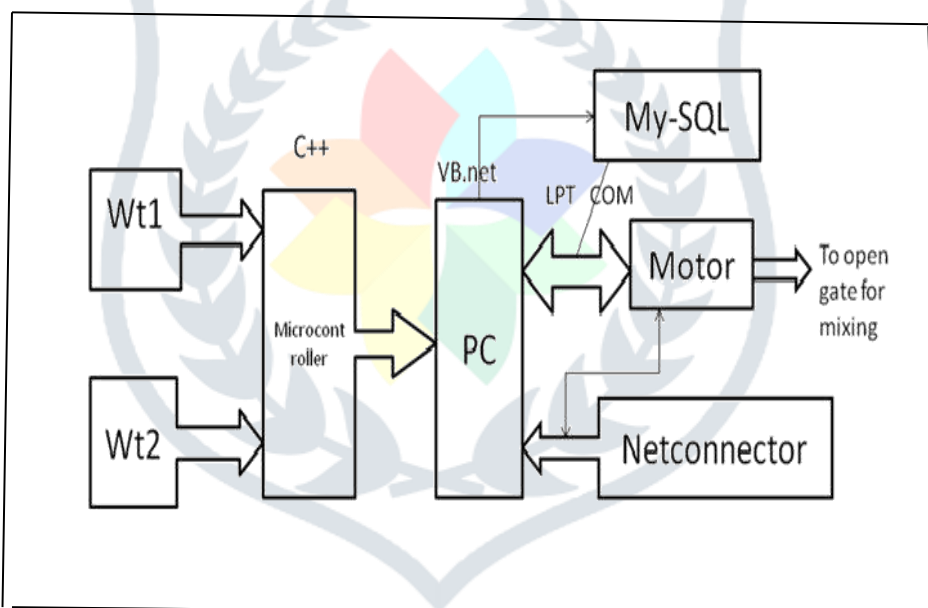
## IV. PROPOSED SYSTEM

Centralized monitoring and control system is one of the needs in the most part of the world. This system reduces the centralized work of regular system and converts it into the decentralized form. The aim of our project is to design E-road construction for government sector for computerized automatic control for the proper proportion of the material using continuous search algorithm. Indian construction system is decentralized, there is no centralized control of government control unit are situated in remote area. It is not efficient to monitor and control them. This leads to terrific loss of material and or prevails corrupt construction.



**Figure 1 :Proposed System**

Then our season approach to design centralized computer controlled and monitor for proper ratio of material. This system actually present in manual format so to reduce this manual work so we develop computerized control and monitor system. This helps in construction department for their best results and gives the proper ratio and detail database of whole system. The project is totally based on technical measures. This project works on continuous search or step algorithm for compare the given ratio and weight sensor ratio. There are three operations are performed on it such as storing the detail database of whole system, start and stop operation of motor to open the gate for mix Turing, and then send the message to ministry office. This process is continued for all type of construction.



**Figure 2: Block Diagram**

**a .Relay**

A relay is electrically operated switch. The first relays were used in long distance telegraph circuits as amplifiers. They repeated the signal coming in from one circuit and re-transmitted it on another circuit. Relays were used extensively in telephone exchanges and early computers to perform logical operations.



**Figure 3 :Relay**

It receives the input signal from the interface card and transmits to the solenoid valve. It provides the 120v AC supply and 24v DC supply. The range of the signal is depends on transmitter that what is the range of the transmitter. Different frequency is on both ends of the transmitter, distance is also depends on this.

#### **b. Interface card**

A network interface controller (NIC, also known as a network interface card, network adapter, LAN adapter, and by similar terms) is a computer hardware component that connects a computer to a computer network. Early network interface controllers were commonly implemented on expansion cards that plugged into a computer bus; the low cost and ubiquity of the Ethernet standard means that most new computers have a network interface built into the motherboard

#### **c. Digital potentiometer**

A digital potentiometer (also called a resistive digital-to-analog converter, or informally a digipot) is a digitally-controlled electronic component that mimics the analog functions of a potentiometer. It is often used for trimming and scaling analog signals by microcontrollers.



**Figure 4: DigiPot**

#### **d. RF Transceiver**

The RF Transceiver uses RF modules for high speed data transmission. The micro electronics in the digital-RF architecture work at speeds up to 100 GHz. The objective in the design was to bring digital domain closer to the antenna, both at the receive and transmit ends using software defined radio (SDR). The software-programmable digital processors used in the circuits permit conversion between digital baseband signals and analog RF.

#### **e. LPT PORT**

A **parallel port** is a type of interface found on computers (personal and otherwise) for connecting peripherals. In computing, a parallel port is a parallel communication physical interface. It is also known as a **printer port** or Getronics port. It was an industry fact standard for many years, and was finally standardized as IEEE 1284 in the late 1990s, which defined a bi-directional version of the port. Today, the parallel port interface is seeing decreasing use because of the rise of Universal Serial Bus (USB) devices, along with network printing using Ethernet.

#### **f. COM PORT**

COM (Communication port) is the original, yet still common, name of the serial port interface on IBM PC-compatible computers. It might refer not only to physical ports, but also to virtual ports, such as ports created by Bluetooth or USB-to-serial adapters.

#### **g. USB PORT**

Universal Serial Bus (USB) is an industry standard developed in the mid-1990s that defines the cables, connectors and communications protocols used in a bus for connection, communication, and power supply between computers and electronic devices. USB was designed to standardize the connection of computer peripherals (including keyboards, pointing devices, digital

cameras, printers, portable media players, disk drives and network adapters) to personal computers, both to communicate and to supply electric power. It has become commonplace on other devices, such as smart phones, PDAs and video game consoles.

#### CONCLUSIONS

Computer system smart utility design to monitor road/dam construction in India.” The proposed idea of us an effective and efficient alternative for proper proportion of material supporting for anticorruption in road construction there is a clear idea related to the requirement of the system that workers behaviors converted to machine behaviors.

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